



Susan Leopold

Ethnobotanist

One who studies the relationships

Between plants and people

Sacredness

Santalum paniculatum

Breath

Ligusticum porteri

Balance

Panax quinquefolius

Sacredness of Sandalwood...

Sacredness

Santalum paniculatum

Global perspective: incense, bindi paste, prayer beads, joss sticks, in trade for 4,000 years- Declared as a royal tree in 1792 by the Sultan of Mysore

Illiahi was known as A Kupuna tree – meaning spiritually respected-

Skin salve to treat burns..Illiahi
Meaning burnt skin...

Chandana in Ayurvedic- cooling

In Hindu religions it is applied to
third eye for lifting depression-
Awakening intelligence



ROLE IN THE ECOLOGY

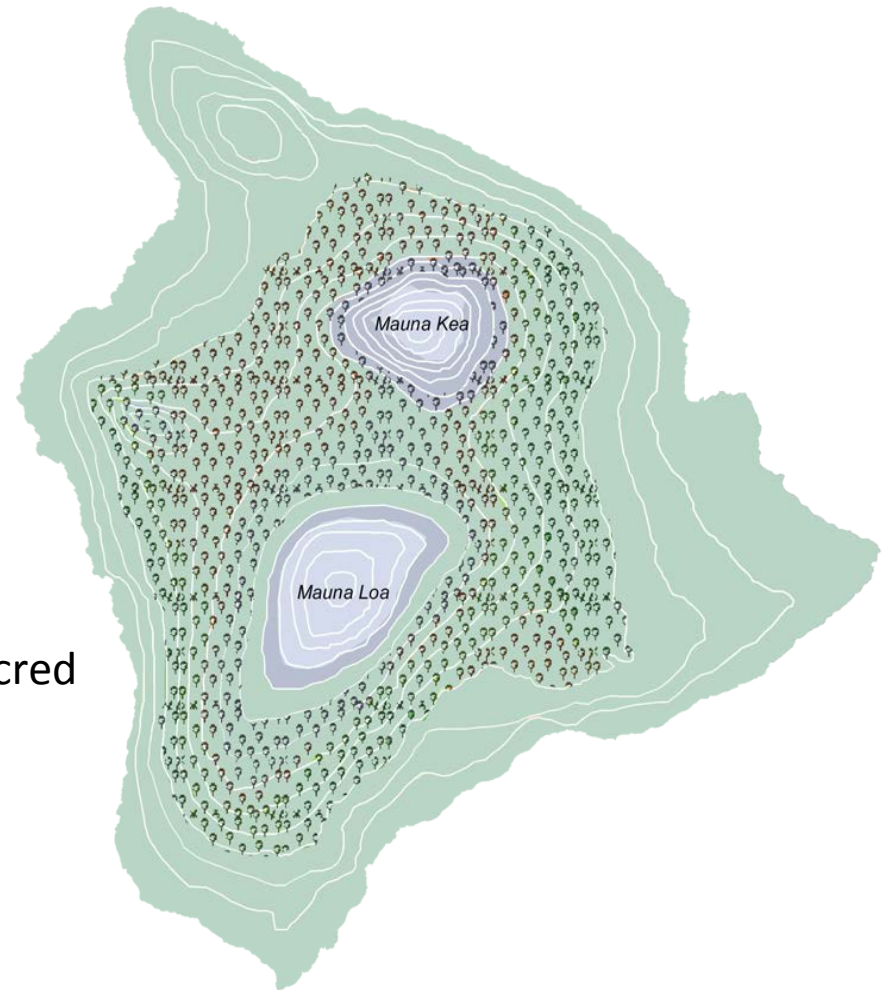
Essential oil- base note

Its ecological role is its hemi-parasitic
plant- shares nitrogen

Keystone species of the
dry tropical forest...

1800's it changes from a culturally sacred
plant to one of economic commerce

Captain Cook is killed 1779





As fur trade drops due to overharvesting of seals.. sandalwood picked up..

1790 first trade in sandalwood but starts to take off in 1810

1826 USS Peacock -sandalwood tax...

By 1830 all sandalwood had been cut....

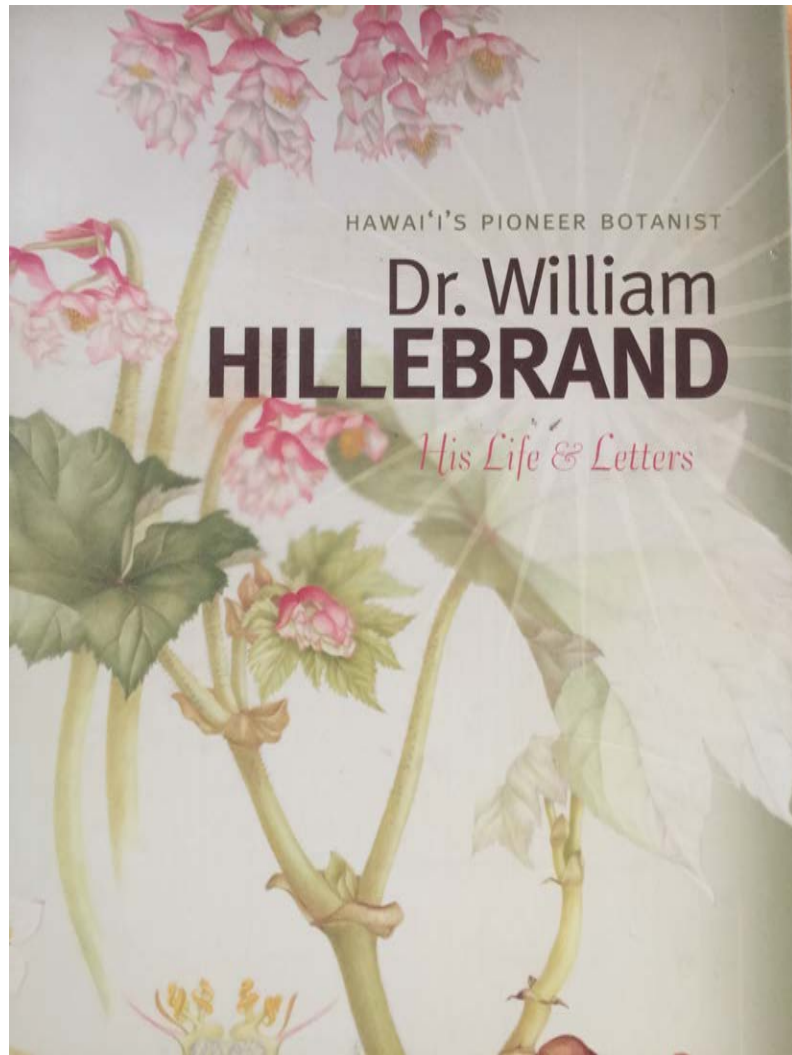
It took just 40 years....

Fort Ross founded in 1812- 1842 abandoned

30 years to completely wipe out the sea otters and fur seals along the NW Coast

www.unitedplantsavers.org





William Hillebrand b. 1821 – botanist, physician- publishes the first flora of Hawaii in 1888- founded the Foster Botanical Garden..

He address the monarchy in 1846
“The relation of forestry to agriculture”

American businessmen over throw the Monarchy in 1893..

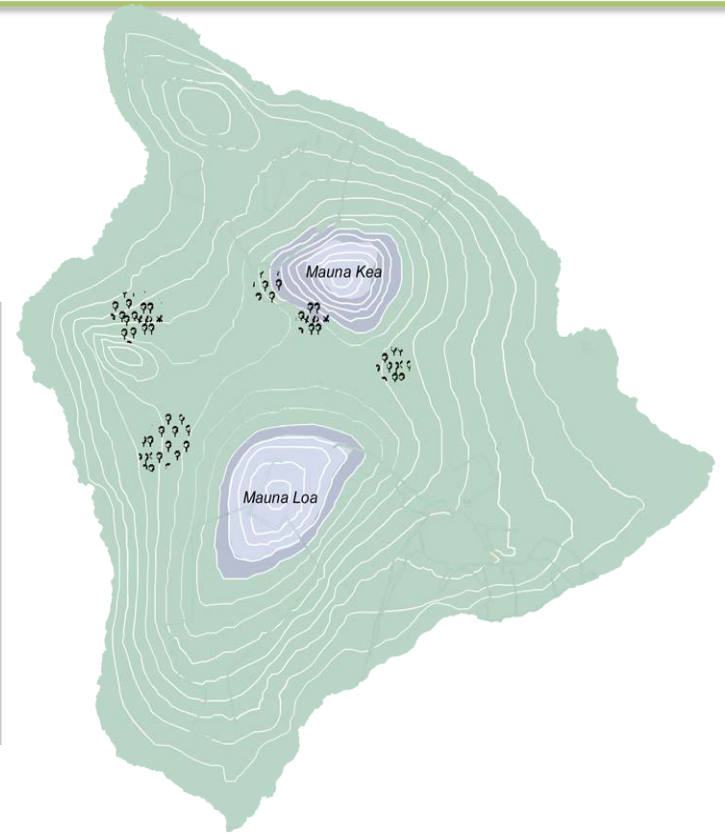
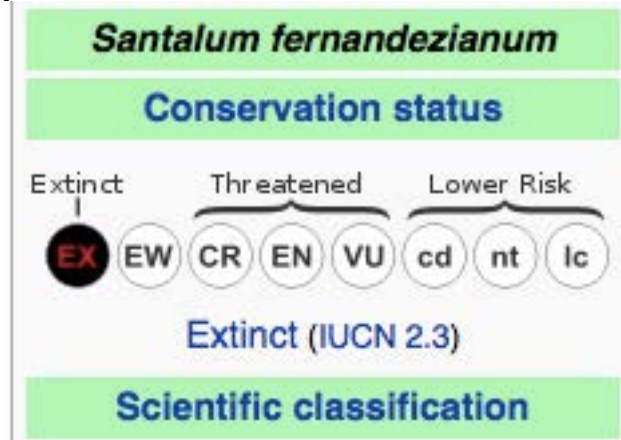
In 1926 CA Judd “Damage to the forest due to trade was inconsequential compared to cattle”

Dry forest decreased 62% percent between 1954 and 1994

123 years since the US
stole Hawaii –

Less than 2% of the dry
tropical forest is left.

2011 Map
Of remaining
Sandalwood
populations



ENVIRONMENT

IUCN: Extinction Threatens 87 Percent Of Hawaii's Native Plants

A major announcement of the world's largest conservation organization could spur new efforts to curb endangered species on the islands.

SEPTEMBER 4, 2016 • By Nick Grube

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Colorful Colorado

Breath
Osha



High altitude medicine
adapting to thin air..
changing weather

Grows at around 7,000 ft
10,000 feet-
Climate change-
Shrinking habitat with
warming temperatures

Osha grows with many
other medicinal plants



Images of tree die off from disease & how osha emerges from tree dead wood
Spruce beetle, Sudden Aspen Decline





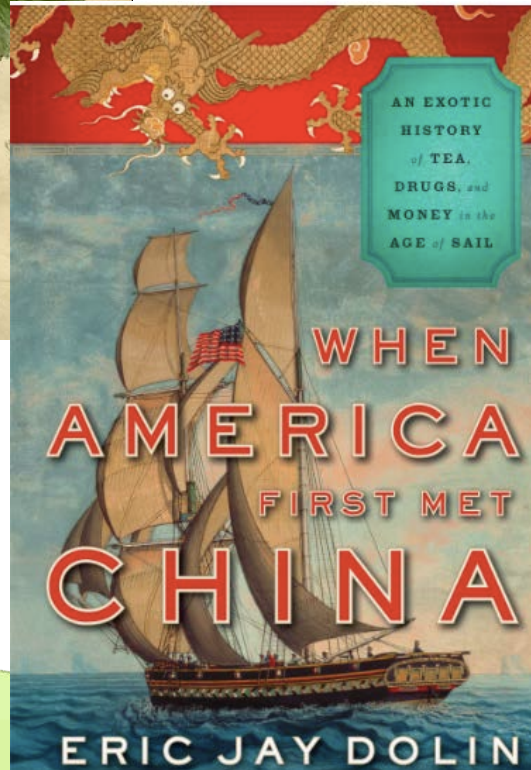
BALANCE

Ginseng – adaptogen

American ginseng is yin- cooling
and calming versus
The yang of Chinese ginseng..

Cherokee folklore...





1716- Jartoux published accounts of ginseng in China and Lafitau (Jesuit Missionary) connects ginseng to N. America- Mohawk Medicine Women

1775-1783 – American Revolutionary War....
(1778 Captain Cook)

1784- Empress of China- 30 tons of ginseng

Fort Ross...1812-1842
1823 George Hammett
1826 USS Peacock..
Sandalwood tax...

1893 – US overtakes Hawaii

Indicator of Forest Health
long living perennial

Environmental changes

Ecological interactions

Harvesting

Poaching

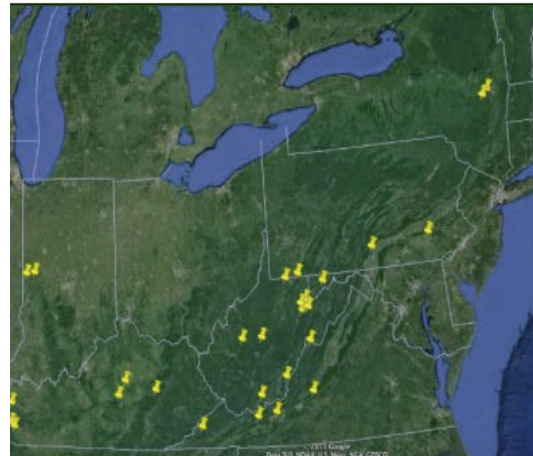
Deer browsing

Climate change

Invasive species



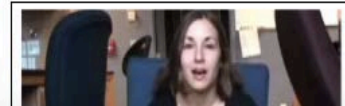
overview

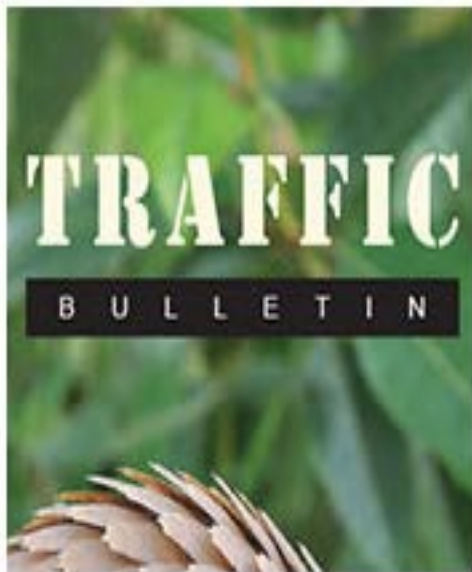


The data for our research comes from intensively monitoring over 4,600 plants in 30 ginseng populations located in 7 states. Annually, census data on individual plant survival, size, health and reproduction is collected. Our study populations are representative of typical ginseng populations, and occur in a variety of habitats ranging from suburban woodlots to rich, old-growth forests.

If you are interested in reading more about our research, please check out our lab's [publications](#). We also recommend reading a comprehensive review paper about [American ginseng](#), written by members of the McGraw lab.

To find out more about
why we census,
[watch our video!](#)





TRAFFIC Bulletin: Forest-Grown Ginseng Verification Program Addresses Illegal Trade

Susan Leopold and Alison Ormsby recently published article in the International Traffic Bulletin gives a short historical overview to how the Forest Grown Ginseng Verification program came into fruition and how it can help encourage a more sustainable supply chain. [READ FULL ARTICLE HERE](#)



The Charleston Gazette | Record amount of illegal ginseng seized

With enough ginseng roots to fill a conference room, West Virginia Division of Natural Resources Law Enforcement revealed Wednesday the largest seizure...

www.wvgazette.com

What do all these plants have in common

Teachers of the ecology

At –risk plants.....

Life history

Effects of harvest

Abundance and range

Habitat threats

Commercial demand



How do we define our relationship with plants and essentially the planet

So we don't love them to death

Plants are trying to teach us....

Sacredness – conservation/restoration

Santalum paniculatum

Breath- research/new ideas for management

Ligusticum porteri

Balance- outreach/education

Panax quinquefolius





At this time we know of 6 endemic species in Hawaii..

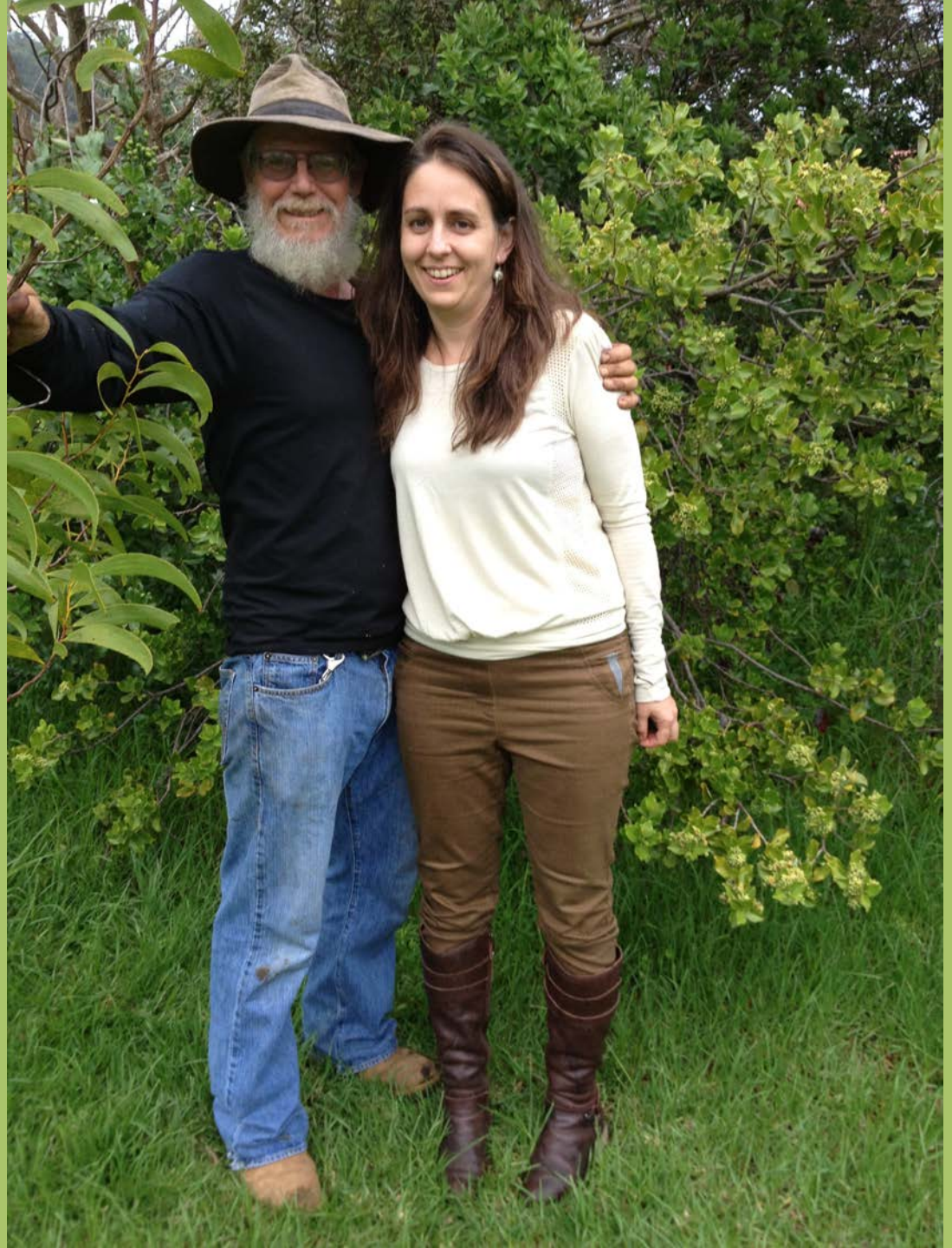
Highest diversity of anywhere in the world..

18 species of sandalwood world wide ...

6 of them still “commercially” harvested

UpS held an International
Sandalwood Symposium
in 2012..
9 countries represented

Hawaii is the only place in
the world where
sandalwood grows that it
is not regulated!





PROGRAMS

EDUCATIONAL PROGRAM

INTERNSHIP PROGRAM

REFERRAL PROGRAM



The Farm Center restoring land through Agroforestry with native trees, Including sandalwood.

TSF: Largest sandalwood plantation to date



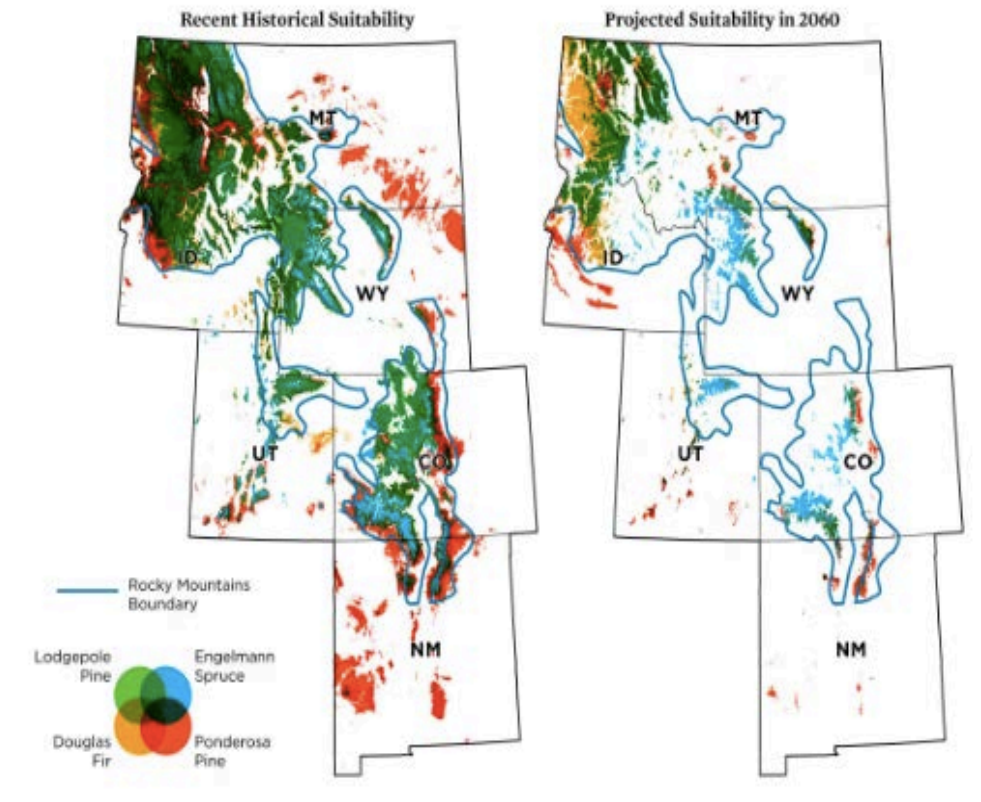
WHY USE TFS SANDALWOOD?

We're **committed to Sandalwood sustainability**. We work to create a sustainable and traceable supply from soil to oil to shelf. This ensures the continued existence of one of the world's most valuable oil-bearing trees.

[READ MORE](#)

Plots in both open areas and wooded, looking at how osha responds to various levels of harvesting. This study is long term and has been going on for five years.





Creating a domestic market and demand for forest grown products

Mountain Rose Herbs Partnership with United Plant Savers

Selling forest grown ginseng leaf, whole plant tincture and root



GROWING AT-RISK APPALACHIAN FOREST BOTANICALS FOR MARKET



JUNE 4, 2016

Pine Mountain, KY • 1:00 - 6:30 PM

Join our panel of experts featuring Preston Jones from the Pine Mountain Settlement School.

FOREST BOTANICAL SUPPLY CHAINS • FOREST GROWN VERIFICATION
GROW APPALACHIA PROJECT • FOREST GROWN COST-SHARE PROGRAM



JUNE 8, 2016

Quicksand, KY • 6:00 - 9:00 PM

Join our panel of experts featuring Anna Lucio from the Kentucky Department of Agriculture.

FOREST BOTANICAL SUPPLY CHAINS • FOREST GROWN VERIFICATION
GINSENG IN KENTUCKY • FOREST GROWN COST-SHARE PROGRAM



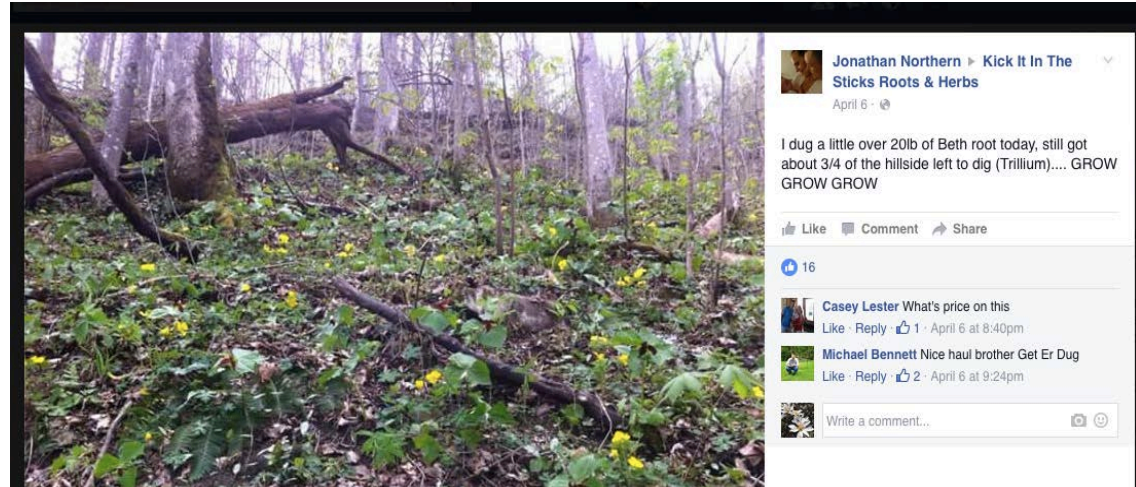
JUNE 25, 2016

Rutland, OH • 10:00 AM - 5:30 PM

Join our panel of experts featuring Jacob Lauch and Jennifer Gerrity of Mountain Rose Herbs.

FOREST BOTANICAL SUPPLY CHAINS • FOREST GROWN VERIFICATION
BUYER PERSPECTIVE • FOREST GROWN COST-SHARE PROGRAM • FOREST WALK AT THE SANCTUARY





Prices and posts from facebook
taken spring 2016

How does this equate to the ethics
of herbalism and plant
conservation?

Sunday closed

Beth Root - Fresh cut in half down the center .60 a lb

Beth Root - Dry cut down the middle \$4.00

Blood Root - Fresh no mold \$1.00 a lb

Blood Root - Dry no mold \$10.00 a lb

Black Cohosh - \$2.75 Dry only (clean, chopped, not molded, and free of foreign debris)

Black Cohosh - Fresh - We will be buying fresh later I will post when, but not rite now.

Blue Cohosh - .50 a lb fresh clean & free of debris

Blue Cohosh Dry - \$2.00 a lb

Black Indian Hemp - Dry Only - Whole plant root herb and all dry only \$5.00 a lb (Good news guys during that last season we where able to prove a buyer for this with out doubt. So harvest and dry away I will need the whole plant this time and brought in by Late July to Middle August.

Cranesbill - .60 a lb Fresh

Cranesbill - \$3.00 a lb dry

Elm Bark - .85 or \$1.00 a lb YOUR CHOICE - let me explain



Herb Stories: How We Protect Trillium



HOW WE PROTECT TRILLIUM.....

Susan's blog about trillium and the herb trade...

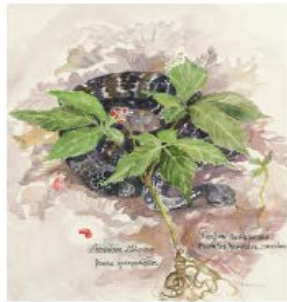
How can plants like trillium be traded for as little as a few dollars a pound?

27 different species -18 of which are endangered or of concern...

SAVE THE DATE

The Future of Ginseng and Forest Botanicals

SYMPOSIUM



July 12-14, 2017
MORGANTOWN, WV

Not to be missed
symposium!

For :
Growers
Herbalists
Apothecaries
Landowners
Herbal allies!

CONSERVATION | CULTIVATION | COMMERCE



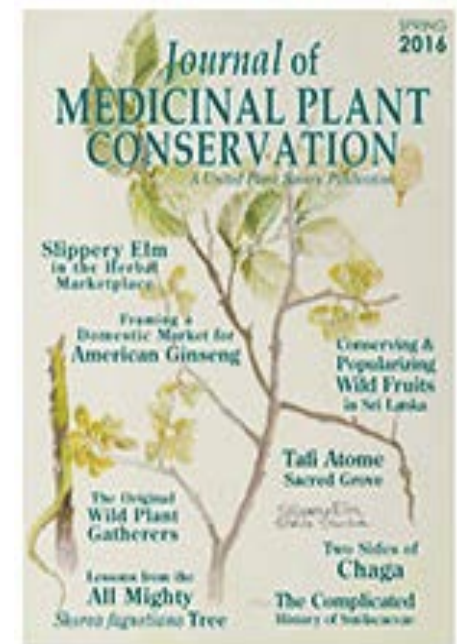
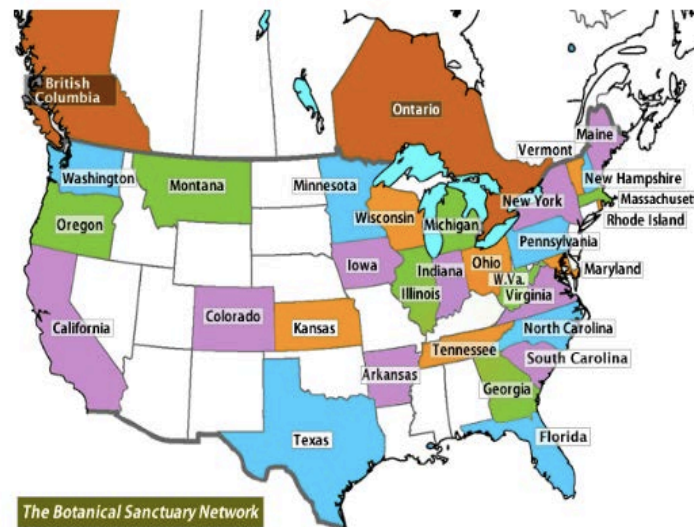
Support our work of conservation, research, education and
Our members You are the ones that need to speak for the plants

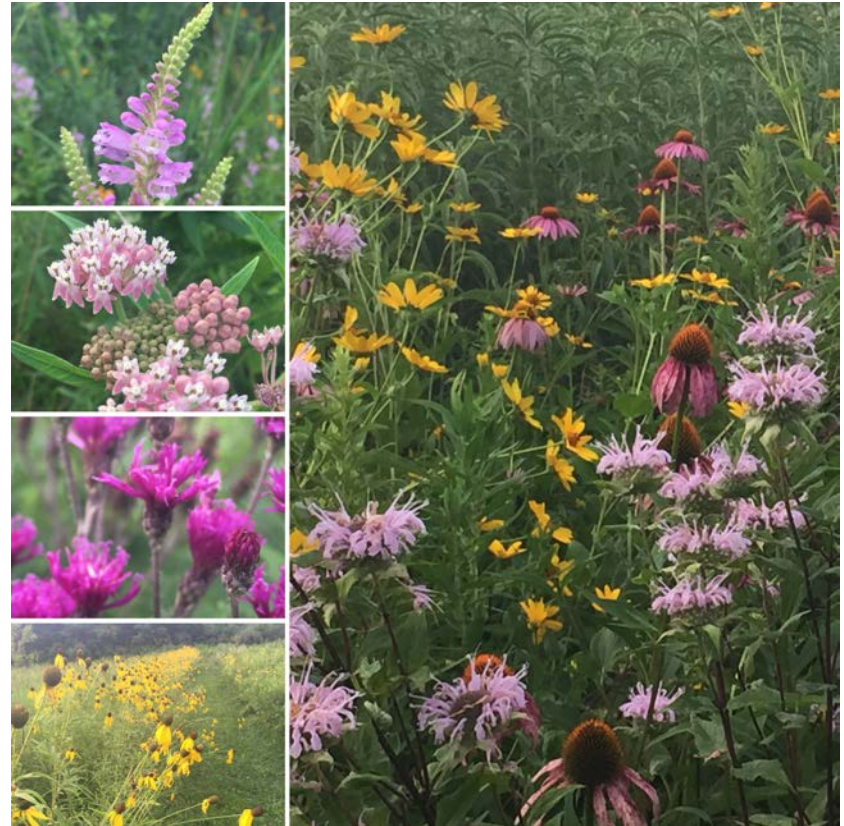
Join our Sanctuary Network, stay informed of our events and visit
Us at the Goldenseal United Plant Savers Botanical Sanctuary!



Botanical Sanctuary Members

Published: Tuesday, 01 November 2011 10:02





Goldenseal Botanical Sanctuary
Rultand, Ohio

KEW STATE OF THE WORLDS PLANTS

391,000 plants known, an average of 2,000 new plants discovered each year

31,000 known useful species – food, fiber, art, construction, ceremonial

17,810 known Medicinal plants of the 31,000

21% of all global plants threatened by extinction

Due to **land use change** and human activity ie climate change

WHY DOES IT MATTER?



Carlos Magdalena, botanical horticulturist looks towards the flower of *Paphiopedilum Rothschildianum*, an endangered plant, at the Royal Botanic Gardens, Kew, in London, Monday, May 9, 2016. Kew Gardens held the launch of the first ever ... [more](#)

The new study documents 31,128 plant types put to a specific use, mostly for medicine (17,810 plant species used in the pursuit of good health), but also for human food, animal food, fuel, materials and other things.

Plants provide many of the building blocks used for textiles and construction materials.

United Plant Savers In The News

Al Jazeera / Inside Story: How should plants be protected in a changing world?



Susan Leopold was asked to be on a panel discussion in response to the recent report released by Kew Botanical Gardens on the State of the Plants. [CHECK OUT THE FULL VIDEO](#)

"Kew's *State of the World's Plants* report provides, for the first time, a baseline assessment of our current knowledge on the diversity of plants on earth, the global threats these plants currently face, and the policies dealing with them. Launched in conjunction with a new website and an international

Our Economy is our environment our environment is our economy

THE NUMBER OF TREES HAVE **DROPPED 46% SINCE THE START**
HUMAN CIVILIZATION..... SEPTEMBER 2015

EarthSky

Updates on your cosmos and world

TONIGHT | SPACE | EARTH | HUMAN WORLD | VIDEOS | STARGAZE | ABOUT

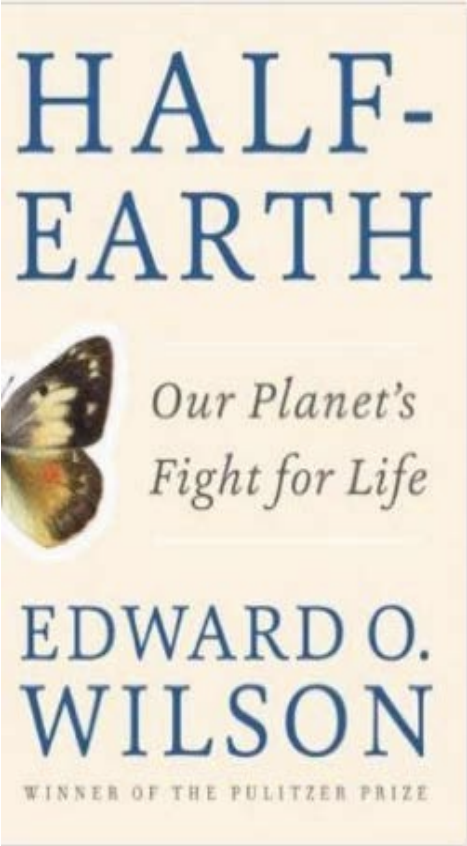
Earth has 3 trillion trees, says study

By Eleanor Imster in EARTH | SCIENCE WIRE | September 12, 2015

That's more than previous estimates. But the number of trees has dropped by 46% since the start of human civilization, says the study.

naturevideo

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Mark Catesby 1683-1749

1712 arrives in Williamsburg

1716- Jartoux published accounts of ginseng in China and Lafitau (Jesuit Missionary) connects ginseng to N. America

1731-1749- Catesby publishes "Natural History of the Carolinas, Florida & Bahamas"

1775-1783 – American Revolutionary War....

1778 Captain Cook is killed

1784- Empress of China sails with 30 tons of ginseng



16. The White-bellied

ARE YOU A MEMBER OF
UNITED PLANT SAVERS?

www.unitedplantsavers.org